

# Product Development Overview

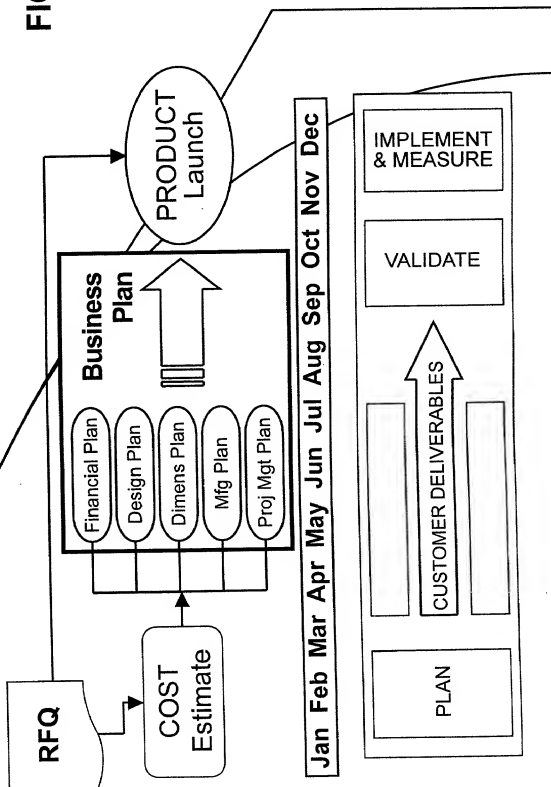
**FIG - 1**

FIG - 2

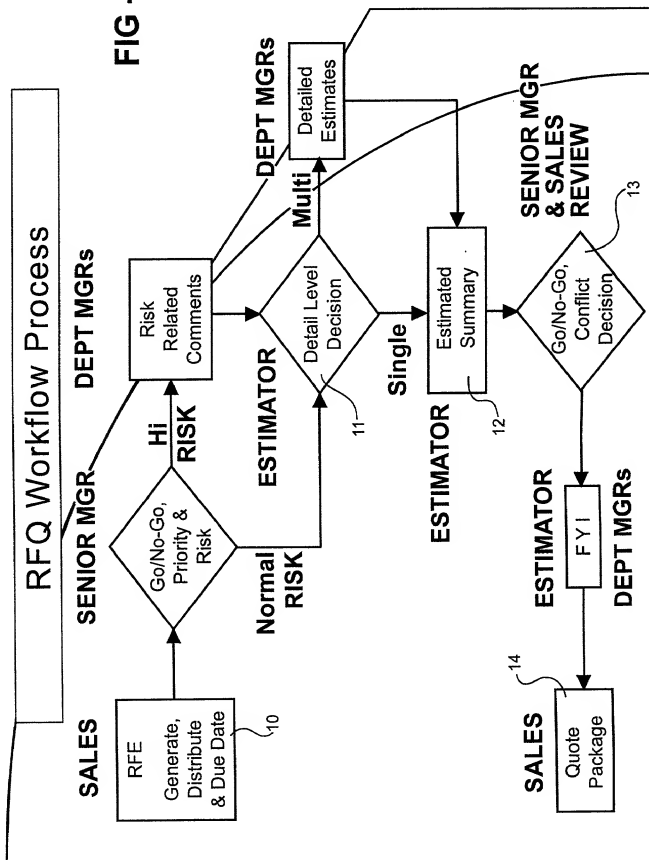


FIG - 3

**My Work Queue**

- ☐ RFE
- ☒ Drafts
- ☐ Sent
- ☐ FY Approval
- ☐ FY Comment
- ☐ FY Estimate
- ☐ FY Information
- ☐ FY Revision
- ☐ FY Pricing
- ☐ FY Quote
- ☐ Projects
- ☐ Reminders
- ☐ Alerts
- ☐ Recycle Bin
- ☐ Status
- ☐ Follow-up
- ☐ Administration
- ☐ Workflow History

**DRAFT RFEs**

<b>NEW</b>	<b>S</b>	<b>RFE #</b>	<b>RFE Title</b>	<b>Quote Due to Cust</b>	<b>Salesperson</b>
<input type="radio"/>	<input checked="" type="radio"/>	2 2351Q	Mercedes headlamp wiper for 2008 M-class	Thu, Aug 2, 2001	sales

If Originator saves RFQ then it's appears in Drafts

FIG - 4

<b>My Work Queue</b> <input type="checkbox"/> RFE <input type="checkbox"/> Drafts <input type="checkbox"/> Sent <input type="checkbox"/> FY Approval <input type="checkbox"/> FY Comment <input type="checkbox"/> FY Estimate <input type="checkbox"/> FY Information <input type="checkbox"/> FY Revision <input type="checkbox"/> FY Pricing <input type="checkbox"/> FY Quote <input type="checkbox"/> Projects <input type="checkbox"/> Reminders <input type="checkbox"/> Alerts <input type="checkbox"/> Recycle Bin <input type="checkbox"/> Status <input type="checkbox"/> Follow-up <input type="checkbox"/> Administration <input type="checkbox"/> Workflow History		<h2 style="text-align: center;">Request for Estimate</h2> <h3>00.1.1. General Information</h3> <table border="1"> <tr> <td>Date Quote Due Customer:</td> <td>8/22/2001</td> <td>Date Created:</td> <td>7/19/2001 2:15 PM</td> </tr> <tr> <td>Salesperson:</td> <td>sales</td> <td>RFE Originator:</td> <td>sales</td> </tr> <tr> <td>RFE #</td> <td></td> <td></td> <td></td> </tr> <tr> <td>RFE Title:</td> <td></td> <td></td> <td></td> </tr> </table> <p style="text-align: center;"> <input checked="" type="radio"/> Bottom-up Quote    <input type="radio"/> Cost to Change       </p> <h3>00.1.2. Customer Information</h3> <table border="1"> <tr> <td>Customer</td> <td></td> <td>Phone</td> <td></td> </tr> <tr> <td>Buyer</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table> <h3>00.1.3. Product Information</h3> <table border="1"> <tr> <td>Part Name:</td> <td></td> </tr> <tr> <td>Customer Part #:</td> <td></td> </tr> <tr> <td>Internal Part #:</td> <td></td> </tr> <tr> <td>Product Description:</td> <td></td> </tr> </table> <p>       Product Design:    <input checked="" type="radio"/> NEW    <input type="radio"/> MODIFIED    <input type="radio"/> CARRYOVER        Model Year:    <input type="text"/>        Vehicle Model:    <input type="text"/> </p>		Date Quote Due Customer:	8/22/2001	Date Created:	7/19/2001 2:15 PM	Salesperson:	sales	RFE Originator:	sales	RFE #				RFE Title:				Customer		Phone		Buyer												Part Name:		Customer Part #:		Internal Part #:		Product Description:	
Date Quote Due Customer:	8/22/2001	Date Created:	7/19/2001 2:15 PM																																								
Salesperson:	sales	RFE Originator:	sales																																								
RFE #																																											
RFE Title:																																											
Customer		Phone																																									
Buyer																																											
Part Name:																																											
Customer Part #:																																											
Internal Part #:																																											
Product Description:																																											

After filling up this form  
 Originator Can Save this RFQ  
 as Draft or Send to a manager  
 for his decision on RFQ.

FIG - 5

RFE\_AUTO\_ID: 2 Mercedes headlamp wiper for 2008 M-class

**Sending RFE to Manager for Approval**

Send To: Approval Manager

Due Date for the Manager's Response:

Comment:

**SEND**

Click on 'S' to send this RFE to Manager for Approval. This opens current window

**My Work Queue**

- ☐ RFE
- ☐ Drafts
- ☐ Sent
- ☐ FY Approval
- ☐ FY Comment
- ☐ FY Estimate
- ☐ FY Information
- ☐ FY Revision
- ☐ FY Picking
- ☐ FY Quote
- ☐ Projects
- ☐ Reminders
- ☐ Alerts
- ☐ Recycle Bin
- ☐ Status
- ☐ Follow-up
- ☐ Administration
- ☐ Workflow History

**SEND**

**DRAFT RFEs**

Item	Subject	Created By	Created Date	Modified Date	Modified By	Status
1	Mercedes headlamp wiper for 2008 M-class	Michael F. Juras et al	7/20/2001	7/20/2001	Michael F. Juras et al	DRAFT

**Workflow History**

Item	Subject	Created By	Created Date	Modified Date	Modified By	Status
1	Mercedes headlamp wiper for 2008 M-class	Michael F. Juras et al	7/20/2001	7/20/2001	Michael F. Juras et al	DRAFT

FIG - 6

<b>My Work Queue</b> <input type="checkbox"/> RFE <input type="checkbox"/> Drafts <input type="checkbox"/> Sent <input type="checkbox"/> FY Approval <input type="checkbox"/> FY Comment <input type="checkbox"/> FY Estimate <input type="checkbox"/> FY Information <input type="checkbox"/> FY Revision <input type="checkbox"/> FY Picking <input type="checkbox"/> FY Quote <input type="checkbox"/> Alerts <input type="checkbox"/> Recycle Bin <input type="checkbox"/> Status <input type="checkbox"/> Follow-up		<b>Request for Estimate</b> <b>00.1.1. General Information</b> Date Quote Due Customer: 7/9/2001 <input type="button" value="v"/> Date Created: 6/22/2001 5:41 PM Salesperson: sales <input type="button" value="v"/> RFE Originator: sales RFE # 23541Q RFE Title: Mercedes headlamp wiper for M-class <input checked="" type="radio"/> Bottom-up Quote <input type="radio"/> Cost to Change																			
<b>00.1.2. Customer Information</b> <table border="1"> <tr> <td>Customer</td> <td>Mercedes</td> </tr> <tr> <td>Title</td> <td>Name</td> </tr> <tr> <td>Buyer</td> <td>Jacques Clausen</td> </tr> <tr> <td>Project Manager</td> <td>Thomas Kinder</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td>Phone</td> </tr> <tr> <td></td> <td>654.235.3599</td> </tr> <tr> <td></td> <td>365-564-5866 x25</td> </tr> <tr> <td></td> <td></td> </tr> </table>		Customer	Mercedes	Title	Name	Buyer	Jacques Clausen	Project Manager	Thomas Kinder				Phone		654.235.3599		365-564-5866 x25			<b>00.1.3. Product Information</b> Part Name: Headlamp Wiper Customer Part #: 24651	
Customer	Mercedes																				
Title	Name																				
Buyer	Jacques Clausen																				
Project Manager	Thomas Kinder																				
	Phone																				
	654.235.3599																				
	365-564-5866 x25																				

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FIG - 8

<input type="checkbox"/> My Work Queue <input checked="" type="checkbox"/> RFE		Priority <input type="text" value="1"/> Response Due Date: 2001-07-20 <input type="text"/> or Business Days <input type="text" value="1"/>	
Comments: Good Opportunity		Business / Financial Manager Product Engineer Manufacturing Engineer Supplier Relations	
Select Team Members if the RFE is approved		Estimator Program Manager Timing / Scheduling Manager Business Strategist Human Resource Manager	
Estimates Program Timing Strategy Transfer		Finance Product Manufacturing Supplier	
<input type="button" value="SAVE"/>		<input type="button" value="SEND"/> <input type="button" value="CANCEL"/>	

### Request for Estimate *(saved disabled)*

<b>00.1.1. General Information</b>			
Date Quote Due Customer:	<input type="text" value="8/2/2001"/>	Date Created:	<input type="text" value="7/19/2001 3:28 PM"/>
Salesperson:	<input type="text" value="sales"/>	RFE Originator:	<input type="text" value="sales"/>
RFE #	<input type="text" value="23541Q"/>	RFE Title:	<input type="text" value="Mercedes headlamp wiper for M-class"/>
<input checked="" type="radio"/> Bottom-up Quote <input type="radio"/> Cost to Change			
<b>00.1.2. Customer Information</b>			
Customer	<input type="text" value="Mercedes"/>		
Title	<input type="text" value="Name"/>	<input type="text" value="Phone"/>	



**My Work Queue**

- ☐ Drafts
- ☐ Sent
- ☐ FY Approval
- ☐ FY Comment
- ☒ FY Estimate
- ☐ FY Information
- ☐ FY Revision
- ☐ FY Pricing
- ☐ FY Quote
- ☐ Projects
- ☐ Reminders
- ☐ Alerts
- ☐ Recycle Bin
- ☐ Status
- ☐ Follow-up
- ☐ Administration

Workflow History

If the RFE is approved by the Manager, next request goes to Estimator for estimation. Logon as Estimator to see the request. 'FY Estimate' lists all the requests for Estimate. Click on blue ball to make a selection.

If the RFE is approved by the Manager, next request goes to Estimator for estimation. Logon as Estimator to see the request. 'FY Estimate' lists all the requests for Estimate. Click on blue ball to make a selection.

FIG - 10

# Estimate Program Costs - Level 1

**COST Estimating Worksheet**

**RFE #** R3 **UPDATE**

☐ 0.1 Cost Estimate  
☒ 0.1.1 Worksheet  
☐ 0.2 Estimate Admin  
☐ 0.2.1 Work Center List  
☐ 0.2.2 Material Stock List

**Program Mgmt**   **Product Design**   **MFG Tooling Design**  **MFG Process Design**

Part No.	Part Name	Molds & Dies	Racks	Fixtures	Secondaries
3233222	Rear Window Wiper	2,333	6,558	30,000	0
3321	Arm	0	0	0	0
2256	Blade	0	0	0	0
33654	Washer hose	0	0	0	0
4545	Hose Clamp	0	0	0	0
22564	Hose Insert	0	0	0	0

**Engineering Costs** →  
**BOM Tooling and Piece Cost** →

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FIG - 11

## Engineering Cost Drill Down - Level 2

## Product Design Engineering

- 0.1 Cost Estimate  
☒ 0.1.1 Worksheet  
☒ 0.2 Estimate Admin  
☒ 0.2.1 Work Center List  
☒ 0.2.2 Material Stock List

R3		UPDATE	SAVE	REVERT	NUMBER OF ROWS TO ADD: <input type="checkbox"/> ADD ROWS	
Material	Hours	Material	Labor	Burden	Task	
<input type="checkbox"/> \$	40	\$65.00	\$2,600	\$	Collect design data	
<input type="checkbox"/> \$	40	\$75.00	\$3,000	\$	Get requirements	
<input type="checkbox"/> \$	200	\$75.00	\$15,000	\$	Create cad models	
<input type="checkbox"/> \$	60	\$65.00	\$3,900	\$	Create Prototypes	
<input type="checkbox"/> \$	50	\$50.00	\$2,500	\$	FEA analysis	
		\$8,000	\$27,000	\$0		
Grand TOTAL= \$ 35,000						Product Design Cost

Material,  
 Labor,  
 Burden

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FIG - 12

## Piece Cost Drill Down - Level 2

0.1 Cost Estimate  
 0.1.1 Worksheet  
 0.2 Estimate Admin

SIMILAR TO: ---N/A---  
 RevLevel: ---N/A---  
 ESTIMATE: ---N/A---

Cost Type: PIE

lbs  kgs

Workcenter Rate

Process Time

Operation Description	Process Description	Workcenter	Cost per Hour	Posted	Process Minutes	Process Cost
G <input type="checkbox"/> cut raw material to size	M222 : ACE CUT-OFF		63.75	05/02/01	5	5
G <input type="checkbox"/> machine to print	M278 : CincinnatiMilacron MC4000		25.00	05/02/01	10	4
						9.48
						5

CostDetails, if any, are specified above.  
 (Sheet metal | .030" thk x 48" x 96" | qty=1 |  
 rier

StockUnitCost: \$ 2.50  
 StockUnitCost: \$ 2.50  
 UnitCost: \$ 2.50

StockUnitsUsed: 1  
 StockUnitsUsed: 1  
 UnitsUsed: 1

EST.COST  
 9.48  
 \$ 2.50  
 .60  
 .30

TOTAL ESTIMATE: **12.88**

Piece Cost

FIG - 13

**Business Plan Drill Down - Level 3**

Planning Worksheet

**Requirements**

Analysis  
Creation Products  
Design Aids

**Plan**

Validate

Implement

Page

**Detailed Description**

Delete	Include	Priority	Description	Comments
%	<input checked="" type="checkbox"/>	1	Door assembly mass must not exceed 130 kg	Total vehicle weight is critical to overall fuel economy
%	<input checked="" type="checkbox"/>	2	Outer skin should use high-strength low alloy steel.	
%	<input checked="" type="checkbox"/>	3	Side impact must meet federal safety standards for 2005 model year.	
%	<input checked="" type="checkbox"/>			
%	<input checked="" type="checkbox"/>			

Brainstorming Switch

Add

FIG - 14

**Business Plan Drill Down - Level 3**

Page ID:2.1.1

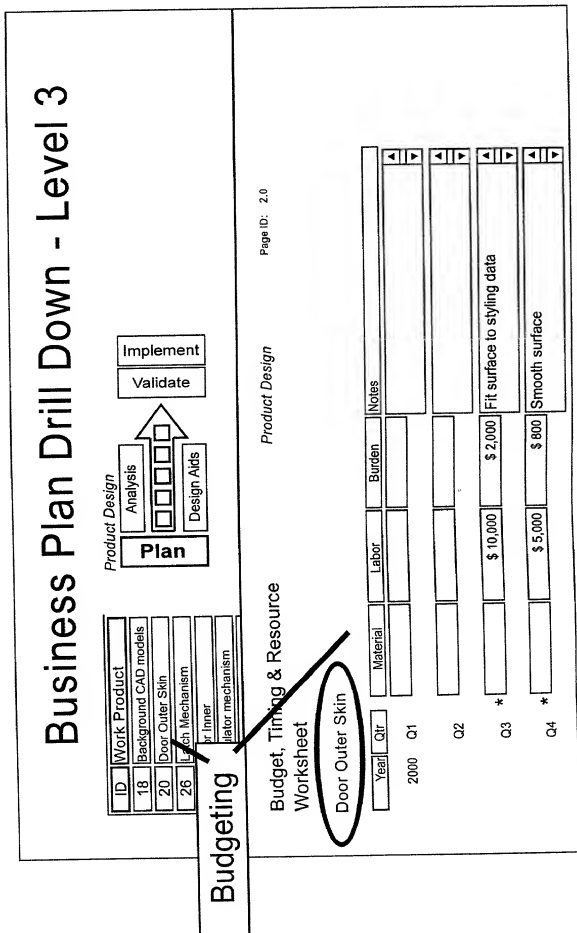
Work Product Worksheet  
**Deliverables**

Detail Work Plan

Delete	Include	Priority	Work Product	Description
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	Background CAD models	Acquire background geometry necessary to design door system
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	Door Outer Skin	Create a surface model from digitized styling data.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	Latch mechanism	Door must meet closure force requirements
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	Door Inner	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5	Regulator mechanism	Kinematics must be modeled
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6	Glass	

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FIG - 15



### Budgeting

**Budget, Timing & Resource Worksheet**

Door Outer Skin

*Product Design*

Page ID: 2.0

Year	Qtr	Material	Labor	Burden	Notes
2000	Q1				
	Q2				
Q3			\$ 10,000	\$ 2,000	Fit surface to styling data
Q4			\$ 5,000	\$ 800	Smooth surface

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FIG - 16

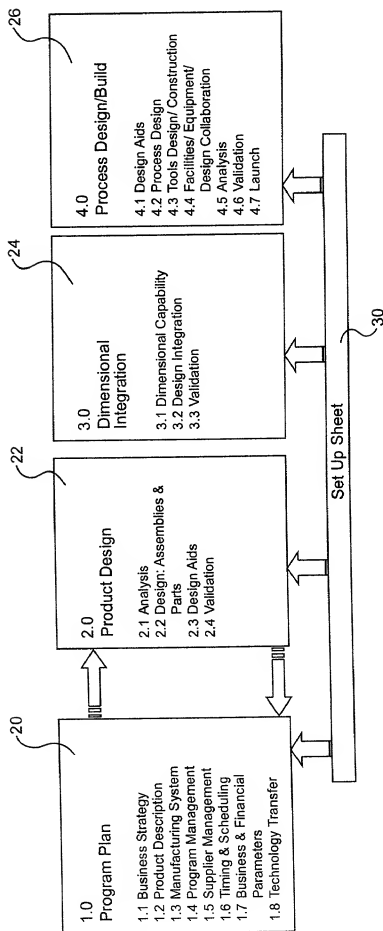




FIG - 17

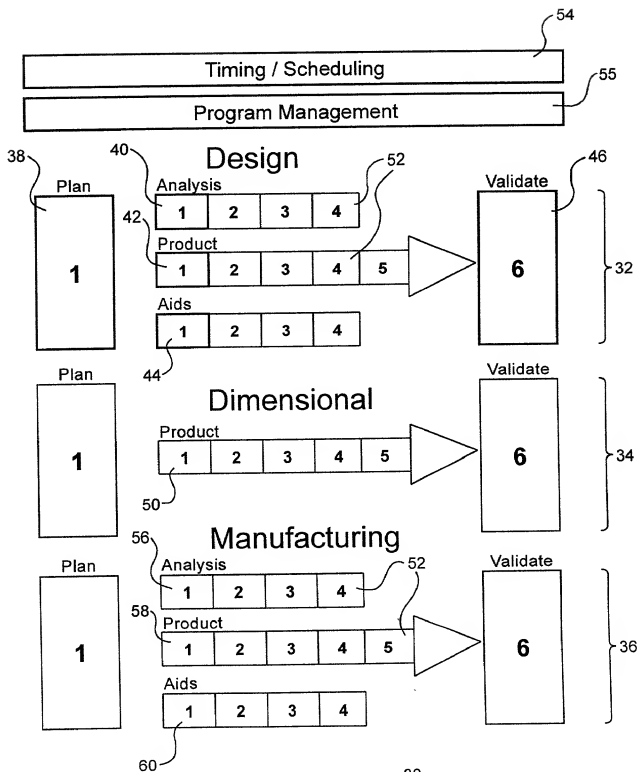
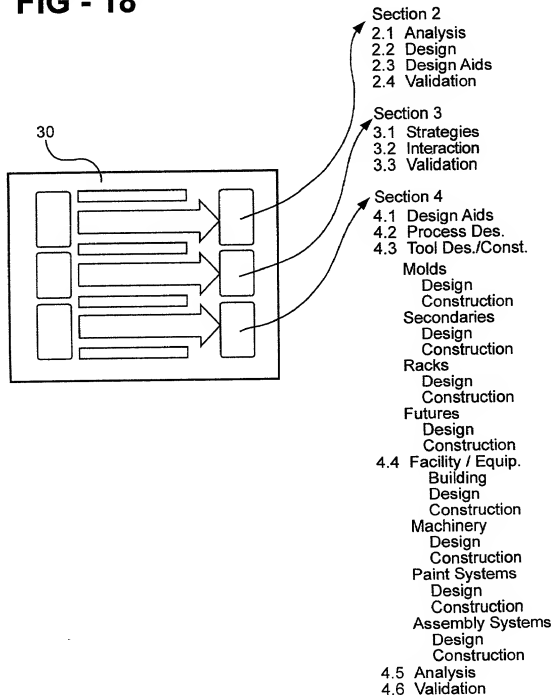


FIG - 18



0993845.032002



## CONTRACT

20/40

Design Product

FIG - 20

Major Review	Work Products	Start	Finish	Duration	Man-hours	Skill Level	Additional Product Description (optional)
06/01/00							

\* Enter Totals for All Products Listed Above

	2000				2001				2002				2003			
	01	02	03	04	01	02	03	04	01	02	03	04	01	02	03	04
Material																
Labor																
Burden																

SAVE

CANCEL

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Program Management

FIG - 22

	2000				2001				2002				2003			
	01	02	03	04	01	02	03	04	01	02	03	04	01	02	03	04
Material																
Labor																
Burden																

SAVE

CANCEL

SAVE

**FIG - 23**

Plan \_\_\_\_\_

CANCEL SAVE

**FIG - 24**

• Enter Totals for All Products Listed Above

CANCEL SAVE

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Design Products

FIG - 25

Major Review	Work Products	Start	Finish	Duration	Man- hours	Skill Level	Additional Product Description (optional)
06/01/00							

\* Enter Totals for All Products Listed Above

	2000				2001				2002				2003			
	01	02	03	04	01	02	03	04	01	02	03	04	01	02	03	04
Material																
Labor																
Burden																

SAVE

CANCEL

Validate

FIG - 26

Major Review	Work Products	Start	Finish	Duration	Man- hours	Skill Level	Additional Product Description (optional)
01/00/00							

\* Enter Totals for All Products Listed Above

	2000				2001				2002				2003			
	01	02	03	04	01	02	03	04	01	02	03	04	01	02	03	04
Material																
Labor																
Burden																

SAVE

CANCEL

**FIG - 27**

[illegible]



FIG - 29

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206200" 548E660

# Cost Summary Business Plan

Links

G:\DataBases

File Edit View

**PDS** TECHNOLOGY

SSP Truck BOM | SRS | < no selection >

Timing | Responsibility | Site Map | Home

setup | plan | product | dimensional | mfg

Links

☐ Level-1 Setup

☐ Level-2 Setup

☐ 1 Program Management

☐ 2 Product Design

☐ 3 Dimensional Design

☐ 4 Mfg. Design/Build

☐ 5 Putting It Together

☐ 6 Summary Reports

☐ 7 Total Program Summary

☐ Total Budget

☐ Total Scheduling

☐ Total Resources

	Grand Total	2000	2001	2002	2003
<b>PRODUCT DESIGN</b>					
Plan	\$ 12,000	\$ 12,000	\$ 0	\$ 0	\$ 0
Core Products	\$ 54,800	\$ 21,300	\$ 33,500	\$ 0	\$ 0
Analysis + Design Aids	\$ 17,800	\$ 3,300	\$ 0	\$ 10,500	\$ 3,700
Validation	\$ 12,500	\$ 0	\$ 0	\$ 0	\$ 12,500
<b>TOTALS</b>	<b>\$ 97,000</b>	<b>\$ 36,600</b>	<b>\$ 33,500</b>	<b>\$ 10,500</b>	<b>\$ 16,300</b>

	Grand Total	2000	2001	2002	2003
<b>DIMENSIONAL MANAGEMENT</b>					
Plan	\$ 67,000	\$ 0	\$ 67,000	\$ 0	\$ 0
Core Products	\$ 1,200	\$ 300	\$ 300	\$ 60	\$ 0
Validation	\$ 6,000	\$ 2,000	\$ 1,000	\$ 3,600	\$ 0
<b>TOTALS</b>	<b>\$ 74,200</b>	<b>\$ 2,300</b>	<b>\$ 68,300</b>	<b>\$ 3,600</b>	<b>\$ 0</b>

	Grand Total	2000	2001	2002	2003
<b>MANUFACTURING PROCESS</b>					
Plan	\$ 11,300	\$ 5,000	\$ 0	\$ 0	\$ 6,300
Core Products	\$ 3,190	\$ 3,190	\$ 0	\$ 0	\$ 0
Analysis + Design Aids	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Validation	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
<b>TOTALS</b>	<b>\$ 14,490</b>	<b>\$ 8,190</b>	<b>\$ 0</b>	<b>\$ 0</b>	<b>\$ 6,300</b>

Unknown Zone (Mixed)

FIG - 30

# Timing - Program Management Business Plan

[http://RS.242.140](#)
[File](#) [Edit](#) [View](#)
[Go Back](#) [Go Forward](#)
[Address](#) [http://RS](#)
☐ PDS

USER

USER

ROLE

☐ Plan

☐ Creation Products

☐ Validation

☐ Configuration

☐ Reports

PROJECT Scheme Configuration &amp; Integration

CREATION PRODUCT: via

ANALYSIS / DESIGN AND

YOUR ACCESS REMAINS

ORG RESPONSIBLE: Program Management

PROJECTS CREATION PRODUCTS

ANALYSIS DESIGN AND

TIME ZONES MARK MILESTONES

TIME ZONES MARK MILESTONES

STARTS: 03/01/2001

ENDS: 03/01/2001

Edit

PROJECT TIMING

UNITS: WEEKS

MILESTONE TYPE	DESCRIPTION	DATE
Review Meeting	Review Functional Specs	3/17/2001
Customer Meeting	Demo Construction Site	3/17/2001

Time Zone Name	Review Quanta	Scheduled Duration	START	Save	View Scale	Include Milestones
Plan / Overview	<input type="checkbox"/>	1	3/17/2001	<input checked="" type="checkbox"/>	5	<input checked="" type="checkbox"/>
Creation Product 1	<input type="checkbox"/>	6	3/22/2001	<input type="checkbox"/>	3/17/2001	<input type="checkbox"/>
Paper Model of Process Examples	<input type="checkbox"/>	9	3/22/2001	<input type="checkbox"/>	3/17/2001	<input type="checkbox"/>
Creation Product 2	<input type="checkbox"/>	9	3/22/2001	<input type="checkbox"/>	3/17/2001	<input type="checkbox"/>
Hardware Software Configuration Spec	<input type="checkbox"/>	8	3/14/2001	<input type="checkbox"/>	3/14/2001	<input type="checkbox"/>
Creation Product 3	<input type="checkbox"/>	8	3/14/2001	<input type="checkbox"/>	3/14/2001	<input type="checkbox"/>
Creation Product 4	<input type="checkbox"/>	5	3/19/2001	<input type="checkbox"/>	3/23/2001	<input type="checkbox"/>
Software Documentation 1 Documents 2 Working Model	<input type="checkbox"/>	6	3/22/2001	<input type="checkbox"/>	3/27/2001	<input type="checkbox"/>
Creation Product 5	<input type="checkbox"/>	3	3/27/2001	<input type="checkbox"/>	3/29/2001	<input type="checkbox"/>
Validation	<input type="checkbox"/>	2	3/29/2001	<input type="checkbox"/>	3/31/2001	<input type="checkbox"/>
Implementation	<input type="checkbox"/>	2	3/29/2001	<input type="checkbox"/>	3/31/2001	<input type="checkbox"/>

☐ Done

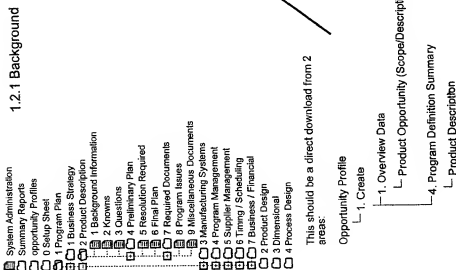
☐ Start

☐ Internal

8:54 AM

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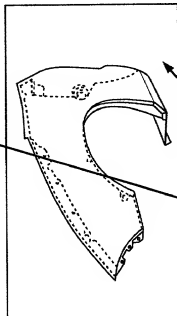
# FIG - 31A



EDIT  ADD NEW  DELETE 

**Product Opportunity:**  
 The product to be designed is the left and right fenders for the Chrysler Q Van. The material will be a non-metallic plastic or composite for weight savings and lower cost production tooling with respect to a typical steel fender. The approximate volume is 80,000 vehicles per year for the 2005 - 2012 time period.

**Product Description:**  
 The product to be designed and produced is a vehicle front fenders. It's purpose is to cover the structure of the front of the vehicle, shield the front of the vehicle from the outside elements, provide an aesthetically pleasing appearance, and provide protection to the components under the fender.



With the user changing or adding more info

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FIG - 31B

## 1.2.2 Knowns

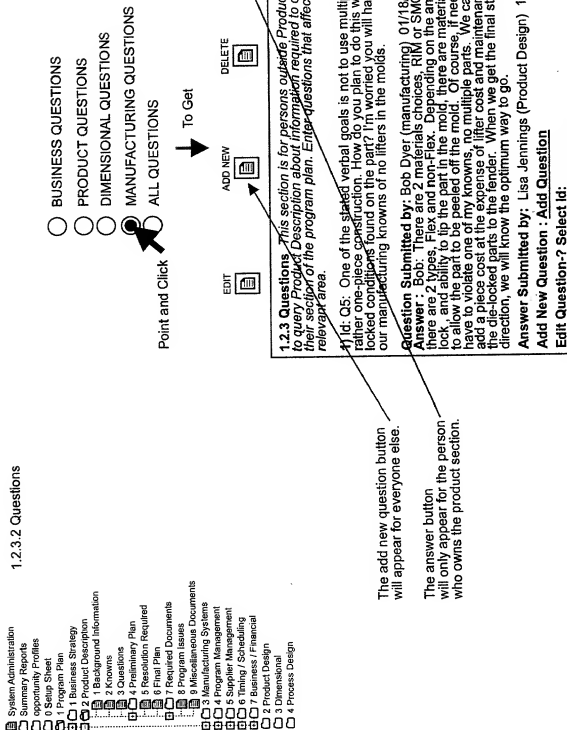
- ☐ System Administration  
☐ Summary Reports  
☐ Opportunity Profiles  
☐ Setup Sheet  
☐ Program Plan  
☐ Program Technology  
☐ Product Design  
☐ Product Design  
☐ 1 Background Information  
☐ 2 Knowns  
☐ 3 Questions  
☐ 4 Preliminary Plan  
☐ 5 Resolution Required  
☐ 6 Final Plan  
☐ 7 Program Documents  
☐ 8 Program Issues  
☐ 9 Miscellaneous Documents  
☐ 3 Manufacturing Systems  
☐ 4 Program Management  
☐ 5 Supplier Management  
☐ 6 Timing / Scheduling  
☐ 7 Business / Financial  
☐ Production  
☐ 3 Personal  
☐ 4 Process Design

EDIT   
 ADD NEW   
 DELETE 

CATEGORY ▼	Enter the knowns. A known is an item that has not been established as a Given or a Requirement
Business	100000 Vehicles/year with 20% service margin
Business	To be manufactured at the Grand Rapids molding facility
Business	Non-sequenced parts
Manufacturing	1000 ton press scheduled
Manufacturing	Simple mold - no lifters
Manufacturing	To be delivered unpainted to customer
Manufacturing	No cooling fixtures budgeted for parts
Product	General profile tolerance of +/- 1.0 mm
Product	Material SMC or flex SMC
Product	Must meet dent resistance of 500 mj
Product	One-piece construction preferred, no bonded parts



## FIG - 31C



## FIG - 31D

## 1.2.4 Preliminary Plan

- ☒ System Administration
- ☒ Summary Reports
- ☒ Opportunity Profiles
- ☒ 0 Setup Sheet
- ☒ 1 Program Plan
- ☒ 2 Business Strategy
- ☒ 3 Business Plan
- ☒ 4 Background Information
- ☒ 5 2 Knowns
- ☒ 6 3 Questions
- ☒ 7 4 Preliminary Plan
- ☒ 8 5 Resolution Required
- ☒ 9 6 Final Plan
- ☒ 10 7 Required Documents
- ☒ 11 8 Miscellaneous Documents
- ☒ 12 9 Manufacturing Systems
- ☒ 13 10 Program Management
- ☒ 14 11 Supplier Management
- ☒ 15 12 Timing / Scheduling
- ☒ 16 13 Business / Financial
- ☒ 17 14 Product Design
- ☒ 18 15 Business Design
- ☒ 19 16 Process Design

**Preliminary Plan:**

The purpose of the preliminary plan is to provide basic information about the product that will be used to determine the overall business viability of the project. After key milestones, the preliminary plan becomes the final plan and portions of the plan are copied into section 2.0, product design. The preliminary plan consists of the following:

1.2.4.1- Product Concepts - word descriptions with sketches, pictures or links to other web sites that help describe the basics of the product

1.2.4.2- Product Content - description of the overall product variations or options that need to be manufactured

1.2.4.3- Bill of Material - The parts list with the hierarchy of the assembly structure for the product.

1.2.4.4- Alternate Strategies - Specific themes or descriptions of key initiatives within the product design that may effect the development of the product design. Examples may include material strategies, service strategies, or shipping strategies.

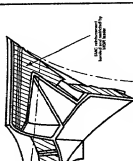
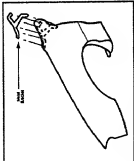
1.2.4.5 Product performance Criteria - Word descriptions with or without graphs or sketches that describe the requirements of the product

FIG - 31E

- 1.2.4.1 Product Concepts
- ☒ System Administration
  - ☒ Summary Reports
  - ☒ Product Development
  - ☒ 0 Setup Sheet
  - ☒ 1 Program Plan
  - ☒ 1 Business Strategy
  - ☒ 2 Product Description
  - ☒ 1 Background Information
  - ☒ 2 Knowns
  - ☒ 3 Questions
  - ☒ 4 Preliminary Plan
  - ☒ 5 Resolution Required
  - ☒ 6 Final Plan
  - ☒ 7 Required Documents
  - ☒ 8 Program Issues
  - ☒ 9 Miscellaneous Documents
  - ☒ 3 Manufacturing Systems
  - ☒ 4 Manufacturing Management
  - ☒ 5 Program Management
  - ☒ 6 Timing / Scheduling
  - ☒ 7 Business / Financial
  - ☒ 2 Product Design
  - ☒ 3 Dimensional
  - ☒ 4 Process Design

## 1.2.4.1 Product Concepts

EDIT  ADD NEW  DELETE 

TITLE	IMAGE	DESCRIPTION
SMC GUSSET FOR REAR UPPER CORNER STIFFNESS		NO ATTACHMENT, ADD STIFFENING GUSSET
METAL GUSSET FOR REAR UPPER CORNER STIFFNESS		ADD METAL BRACKET TO FENDER THAT WILL BECOME ASSEMBLY DATUM

The EDIT, ADD NEW, and DELETE buttons will only appear for the people defined by the responsibility matrix. The radio buttons to the left of the table will choose the row to be modified

FIG - 31F

## 1.2.4.2 Product Content

- ☐ System Administration  
☐ Summary Reports  
☐ Reports and Profiles  
☐ 0 Setup Sheet  
☐ 1 Program Plan  
☐ 2 Product Description  
☐ 3 Background Information  
☐ 4 Knowns  
☐ 5 Constraints  
☐ 6 Preliminary Plan  
☐ 7 Resolution Required  
☐ 8 Final Plan  
☐ 9 Required Documents  
☐ 10 Program Issues  
☐ 11 Miscellaneous Documents  
☐ 12 Manufacturing Systems  
☐ 13 Program Management  
☐ 14 Program Management  
☐ 15 Timing / Scheduling  
☐ 16 Business / Financial  
☐ 17 Product Design  
☐ 18 Dimensional  
☐ 19 Process Design

EDIT 
 ADD NEW 
 DELETE 

TITLE	DESCRIPTION
FENDER MOLDING OPTIONS	<ul style="list-style-type: none"> <li>Two levels of trim will be used on the fenders. One with a spear molding and one without. The molding will be a 20-40% option and will match a spear molding on the door and rear quarter.</li> </ul>
OPTIONAL COLORS	<ul style="list-style-type: none"> <li>The fenders will be painted at the vehicle assembly plant with 10 optional colors. Some colors will be light and may require a lighter primer to prevent read through.</li> </ul>
SURFACE QUALITY TARGETS	<ul style="list-style-type: none"> <li>The outer surface will be class A and require an orange peel level below 20 OPL. The gloss level is expected to match the rest of the vehicle and is set to 100 VGL. There should be no perceptible surface imperfections.</li> </ul>
FENDER AIR DUCTING	<ul style="list-style-type: none"> <li>The fenders should have the ability to allow airflow into the brake area for brake cooling. The should be a decorative bezel surrounding the cooling inlet.</li> </ul>



### 1.2.4.3 Bill of Material

- 
- ```

graph TD
    SA[System Administration] --> SR[Summary Reports]
    SA --> OP[opportunity Profiles]
    SA --> SSP[6 Setup - Sales Plan]
    SR --> BI[1 Background Information]
    SR --> KN[2 Knowns]
    OP --> Q[3 Questions]
    OP --> PP[4 Preliminary Plan]
    SSP --> P7[7 Preliminary Plan]
    SSP --> RR[8 Resolution Required]
    SSP --> FP[9 Final Plan]
    BI --> RD[10 Required Documents]
    BI --> MD[11 Miscellaneous Documents]
    KN --> MS[12 Manufacturing Systems]
    KN --> PM[13 Program Management]
    Q --> SM[14 Supplier Management]
    Q --> TS[15 Timing / Scheduling]
    PP --> BF[16 Business / Financial]
    PP --> PD[17 Product Design]
    P7 --> D[18 Dimensional]
    P7 --> CD[19 Process Design]
  
```

ADD BOM  
DETAILSCHANGE  
BOM  
STRUCTURE

To get  
blue area  
that can be  
changed

To get  
blue area  
that can be  
changed

| UPC CODE | P/N CODE | QTY USED | PART DESC | CHARGE NUMBER | ASM STA | ASSY INST | BUILD # | ENGR CODE | REL   | ENGR NAME | MGR NAME | ENG  |       |
|----------|----------|----------|-----------|---------------|---------|-----------|---------|-----------|-------|-----------|----------|------|-------|
| 9f       | 2150     | 1E-07    | A         | FEND 2003     | 1       | 15545     | 325     | ####      | 58YV6 | 6382      | 3033     | STON | SMITH |

THE PROGRAM LAUNCHED WOULD BE EXCEL FOR EXAMPLE WHERE ADDITIONAL COLUMNS AND TITLES CAN BE ADDED.

THE ABOVE EXAMPLE IS THE BOM COLUMN TITLES USED BY AN OEM:

35/40

## FIG - 31H

## 1.2.4.4 Product Strategies

- ☒ System Administration
- ☒ System Reports
- ☒ Opportunity Profiles
- ☒ 0 Setup Sheet
- ☒ 1 Program Plan
- ☒ 1 Business Strategy
- ☒ 2 Product Description
- ☒ 1 Background Information
- ☒ 2 Owners
- ☒ 3 Drawings
- ☒ 4 Preliminary Plan
- ☒ 5 Resolution Required
- ☒ 6 Final Plan
- ☒ 7 Required Documents
- ☒ 8 Program Issues
- ☒ 9 Miscellaneous Documents
- ☒ 10 Manufacturing Management
- ☒ 11 Supplier Management
- ☒ 12 Scheduling
- ☒ 13 Business / Financial
- ☒ 14 Product Design
- ☒ 15 Dimensional
- ☒ 16 Process Design

EDIT  ADD NEW  DELETE 

| TITLE             | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MATERIAL STRATEGY | There are three candidates for materials for the front fender. They are SMC, Flex SMC, and RIM. The leading candidate is SMC due to it's low cost and high stiffness. If a die lock condition exists, where the part will have to be peeled off a mold, then Flex SMC may be an alternative. If the die lock is more severe, then RIM may be used. The cost and lack of dimensional stability for RIM is not as attractive as SMC or Flex SMC, therefore an alternative may be SMC with the die locked part bonded to the fender to become an assembly. This violates the part strategy of having one part without multiple pieces for the fender. |
| PART STRATEGY     | The main strategy for parts is that there is one part - a plastic fender. The fender should be without additional brackets or reinforcements. If this is not possible, then minimizing the brackets that attach the fender to the vehicle is imperative.                                                                                                                                                                                                                                                                                                                                                                                           |
| TOOLING STRATEGY  | SMC molds without lifters is the main tooling strategy. If a die lock condition, then the complexity of the lifter should be weighed against the additional parts that must be added to the fender.                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| SERVICE STRATEGY  | Normal conventional tools for service is the service strategy. The fender should not require special tools for repairing a damaged front vehicle. And the fender itself should be repairable with standard body shop repair materials.                                                                                                                                                                                                                                                                                                                                                                                                             |

FIG - 311

### 1.2.4.5 Product Performance Criteria

- ☐ System Administration
- ☐ Summary Reports
- ☐ Opportunity Profiles
- ☐ Setup Sheet
- ☐ Program File
- ☐ Program Strategy
- ☐ Product Description
- ☐ Background Information
  - ☐ 1 Background Information
  - ☐ 2 Knowns
  - ☐ 3 Questions
  - ☐ 4 Preliminary Plan
  - ☐ 5 Resolution Required
  - ☐ 6 Final Plan
  - ☐ 7 Miscellaneous Documents
  - ☐ 8 Program Issues
  - ☐ 9 Miscellaneous Documents
  - ☐ 3 Manufacturing Systems
  - ☐ 4 Program Management
  - ☐ 5 Supplier Management
  - ☐ 6 Business / Financial
  - ☐ 7 Operational
  - ☐ 3 Process Design

- Point and Click
- ☒ MAJOR PERFORMANCE REQUIREMENTS
  - ☐ SUB-SYSTEM PERFORMANCE REQUIREMENTS
  - ☐ COMPONENT PERFORMANCE REQUIREMENTS
  - ☐ OTHER REQUIREMENTS

To Get

EDIT  ADD NEW  DELETE 

| CATEGORY ▼     |                                                                                                                                      |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Durability     | Enter the major performance requirements. Examples include: Durability, Serviceability, Warranty, Thermal distortion, Weatherability |
| Durability     | The fenders shall withstand 100,000 miles or 10 years                                                                                |
| Durability     | No cracks or imperfections from hail or stone impingement test                                                                       |
| Durability     | No damage from hood and door slam test                                                                                               |
| Serviceability | Replace with standard tools and no fixtures                                                                                          |
| Serviceability | Repair with standard auto body materials                                                                                             |
| Serviceability | Sand, Prime, and paint with standard auto body materials                                                                             |
| Warranty       | IPTV target of 3.0 or less                                                                                                           |
| Warranty       | No JD Power complaints                                                                                                               |
| Weatherability | Shall pass xeon weatherability exposure test                                                                                         |

☐ ☐ ☐ ☐ ☒ ☐ ☐ ☐ ☐

37/40

FIG - 31J

- 1.2.5 Major Issues
- ☐ System Administration
  - ☐ Summary Reports
  - ☐ Opportunity Profiles
  - ☐ 1 Product Plan
  - ☐ 1 Business Strategy
  - ☐ 2 Product Description
  - ☐ 1 Background Information
  - ☐ 2 Knowns
  - ☐ 3 Questions
  - ☐ 4 Preliminary Plan
  - ☐ 5 Remediation Required
  - ☐ 6 Required Documents
  - ☐ 7 Program Issues
  - ☐ 8 Miscellaneous Documents
  - ☐ 9 Manufacturing System
  - ☐ 3 Program Management
  - ☐ 4 Supplier Management
  - ☐ 5 Training / Scheduling
  - ☐ 6 Product Design
  - ☐ 3 Product Design (Financial)
  - ☐ 4 Process Design

- ☐ BUSINESS ISSUES
- ☒ PRODUCT ISSUES
- ☐ DIMENSIONAL ISSUES
- ☐ MANUFACTURING ISSUES
- ☐ ALL ISSUES

Point and Click



To Get

|            |                                       |
|------------|---------------------------------------|
| AP2-I-A1-A | REDUCE BUDGET BY \$50K                |
| AP2-I-A2-A | DIE LOCK CONDITION FORCES BONDED PART |

Point and Click



To Get



ADD NEW ISSUE

All users will get this button  
 which will allow anyone to  
 input a major issue to the right  
 area

| MAJOR ISSUE                               |                                          |
|-------------------------------------------|------------------------------------------|
| REQUEST # AP2-I-A1-A                      | JOE SMITH - ANALYSIS - 248-485-3343      |
| ASSIGNED TO NAME                          | ISSUE ORIGINATOR NAME, PHONE, FAX, EMAIL |
| ISSUE DESCRIPTION:                        | REDUCE BUDGET BY \$50K                   |
| DATE INITIATED:                           | 8/1/00                                   |
| DATE LAST UPDATE                          | DOUG FINCH - FINANCIAL - 248-485-3889    |
| (INDEX REVISION LEVEL                     |                                          |
| ORIGINATOR (NAME,                         |                                          |
| DEPARTMENT, PHONE,                        |                                          |
| FAX, EMAIL):                              |                                          |
| DATE RESPONSE                             | 9/15/00                                  |
| REQUIRE                                   |                                          |
| ESTIMATED DATE                            | 10/1/00                                  |
| RESPONSE WILL BE                          |                                          |
| ENTERED:                                  |                                          |
| REQUESTED RESPONSE                        | REDUCE BUDGET BY \$50K                   |
| REASON FOR REQUEST:                       |                                          |
| MEET CORPORATE FINANCIAL GOALS ROLLED OUT | ON 7/1/00                                |
| STATUS / UPDATES                          |                                          |
| PROPOSED RESOLUTION:                      |                                          |
| APPROVER NAME:                            | APPROVED:                                |
| APPROVER NAME:                            | APPROVED:                                |
| APPROVER NAME:                            | APPROVED:                                |

The assignee of  
 this major issue will have the  
 update button appear on their screen.  
 No one else will have the ability to  
 change this screen



UPDATE

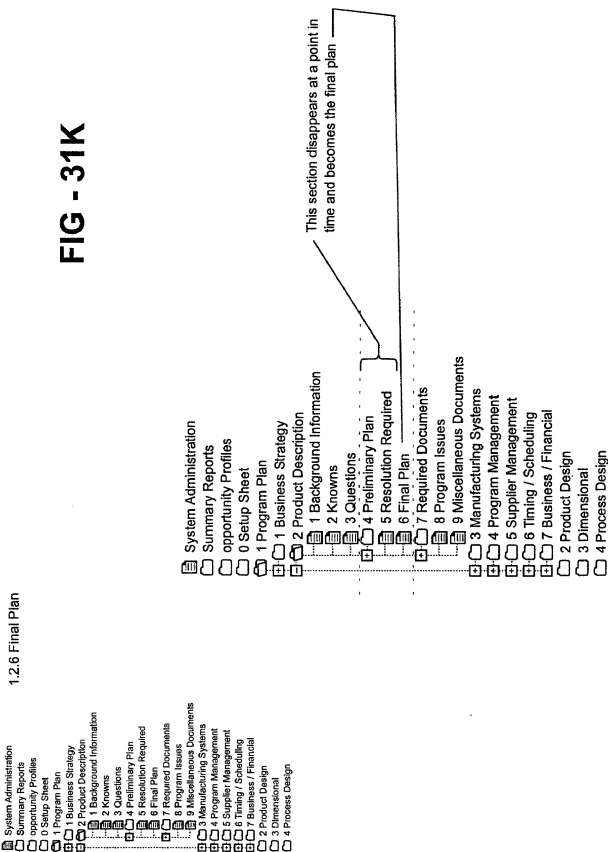
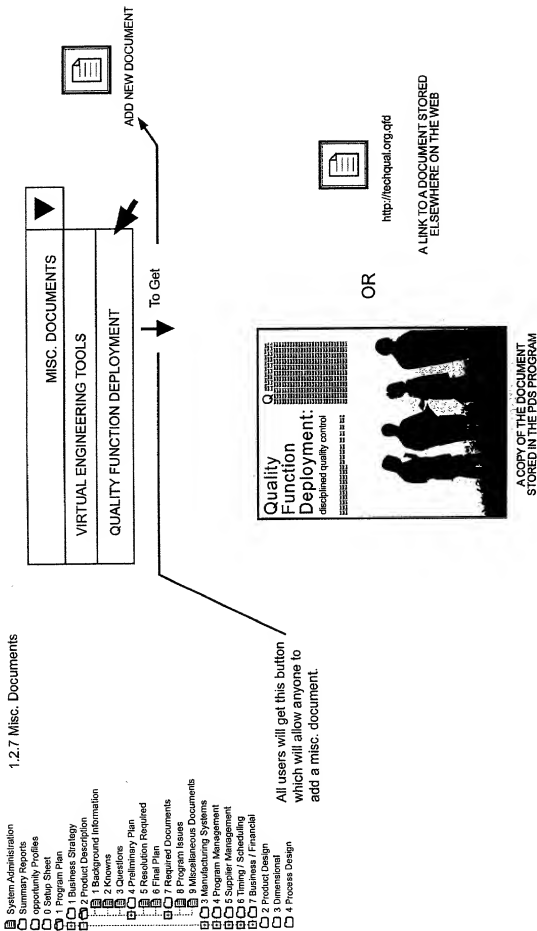


FIG - 31L



- 1.2 Product Description
  - 1.2.1 Background Information
  - 1.2.2 Knowns
  - 1.2.3 Questions
  - 1.2.4 Plan
    - 1.2.4.a Product Concepts
    - 1.2.4.b Product Contingencies
    - 1.2.4.c Bill of Materials
      - 1.2.4.c.1 BOM Structure
      - 1.2.4.c.1 BOM Parts
      - 1.2.4.c.2 Detail BOM
      - 1.2.4.d Material Strategies
      - 1.2.4.e Product Performance
      - 1.2.9 Misc Documents
- 1.3 Bill of Mfg Equipment
  - 1.3.4 Quove / Contractions